

REMARKS

Independent Claim 1 is the sole claim presented for consideration.

The specification has been amended to include descriptions of the acronyms, as well as provide generic terminology to the trademarks used in the specification.

The abstract has been amended to better set forth the technical features of the subject invention.

Claim 1 has been amended to further distinguish Applicant's invention from the cited art. Claims 2-4 have been canceled.

Claims 1-4 were rejected under 35 U.S.C. § 101 for being directed to non-statutory subject matter. In response to this rejection, claim 1 has been amended to include a tangible and useful result of executing an injection molding analysis and outputting the results. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 101 is respectfully requested.

Claims 1-3 stand rejected under 35 U.S.C. § 103 as allegedly being obvious over Finnigan et al., '490 in view of De Groote et al., '886. Claim 4 stands rejected as allegedly being obvious over those citations and further in view of Itoh et al., '973. These rejections are respectfully traversed.

Claim 1 of Applicant's invention relates to a geometric model conversion method of converting a three-dimensional CAD geometric analytical model of a thin-walled structure into a two-dimensional analytical model. The method comprises a step of generating a plurality of tetrahedral solid elements, each of which has a single-layered structure in a plate thickness direction, by dividing an input three-dimensional CAD geometric analytical model which has a

thin-walled structure, and a step of connecting intermediate nodes of sides that extend in a direction of plate thickness in each tetrahedral solid element to generate a plurality of triangular shell elements or rectangular shell elements as the two-dimensional analytical model. The method also includes a step of executing an injection molding analysis with respect to each shell element of the low-dimensional analytical model generated in the connecting step and outputting the results.

In accordance with Applicant's claimed invention, a high performance geometric model conversion method can be provided. Support for the claim amendments can be found on page 7, line 24, *et seq.*, of the specification.

The primary citation to Finnigan et al. relates to the conversion of computer tomography data into finite element models. As understood, Finnigan et al. uses triangular elements for a two-dimensional model and tetrahedral elements for a three-dimensional model.

The secondary citation to De Groote et al. relates to a method for manufacturing new chemical products and is relied upon for its teaching of connecting intermediate nodes of sides of a tetrahedral element to form a triangle.

Neither Finnigan et al. nor De Groote et al., however, are read to teach or suggest a geometric model conversion that generates a plurality of tetrahedral solid elements each having a single-layered structure in a plate thickness direction by dividing an input three-dimensional CAD geometric analytical model which has a thin-walled structure, and connecting intermediate nodes of sides to generate a plurality of triangular shell elements or rectangular shell elements as the two-dimensional analytical model. In De Groote et al., a chemical molecular model is used,

and there is no teaching or suggestion of generating a plurality of shell elements (triangular or rectangular) from a plurality of tetrahedral solid elements. Accordingly, without conceding the propriety of combining the art in the manner proposed in the Office Action, such a combination still fails to teach or suggest Applicant's claimed invention. Therefore, reconsideration and withdrawal of the rejection of claims 1-3 under 35 U.S.C. § 103 is respectfully requested.

The tertiary citation to Itoh et al. relates to generating a quadrilateral mesh and is relied upon for disclosing that two adjacent triangular shell elements can be converted into a rectangular shell element. Itoh et al. fails, however, to compensate for the deficiencies in Finnigan et al. and De Groote et al. as discussed above with respect to claim 1.

Accordingly, it is submitted that Applicant's invention as set forth in independent claim 1 is patentable over the cited art.

In view of the foregoing, reconsideration and allowance of this application is deemed to be in order and such action is respectfully requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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